



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2012-0441; Directorate Identifier 2012-CE-011-AD; Amendment 39-17106; AD 2012-13-04]**

**RIN 2120-AA64**

**Airworthiness Directives; Empresa Brasileira de Aeronáutica S.A. (EMBRAER)**

**Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), Department of Transportation (DOT).

**ACTION:** Final rule.

**SUMMARY:** We are adopting a new airworthiness directive (AD) for certain Empresa Brasileira de Aeronáutica S.A. (EMBRAER) Model EMB-505 airplanes. This AD results from mandatory continuing airworthiness information (MCAI) issued by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as an inadequate amount of drain holes in the primary control surfaces (rudder, elevator, and aileron) and their tab surfaces, which may allow water to accumulate in the control surfaces. This condition could cause unbalanced flight control surfaces and reduced flutter margins, which could result in loss of control of the airplane. We are issuing this AD to require actions to address the unsafe condition on these products.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the AD as of [INSERT DATE 35 DAYS AFTER DATE PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may examine the AD docket on the Internet at <http://www.regulations.gov> or in person at Document Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590.

For service information identified in this AD, contact Empresa Brasileira de Aeronautica S.A. (EMBRAER), Phenom Maintenance Support, Av. Brigadeiro Faria Lima, 2170, São José dos Campos - SP, CEP: 12227-901 – PO Box 36/2, BRASIL; fax ++55 12 3927-2619; email [phenom.reliability@embraer.com.br](mailto:phenom.reliability@embraer.com.br); Internet: <http://www.embraer.com>. You may review copies of the referenced service information at the FAA, Small Airplane Directorate, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the FAA, call (816) 329-4148.

**FOR FURTHER INFORMATION CONTACT:** Jim Rutherford, Aerospace Engineer, FAA, Small Airplane Directorate, 901 Locust, Room 301, Kansas City, Missouri 64106; telephone: (816) 329-4165; fax: (816) 329-4090; email: [jim.rutherford@faa.gov](mailto:jim.rutherford@faa.gov).

**SUPPLEMENTARY INFORMATION:**

**Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to the specified products. That NPRM was published in the *Federal Register* on April 24, 2012 (77 FR 24425). That NPRM proposed to correct an unsafe condition for the specified products. The MCAI states:

It has been found that certain regions of the rudder, elevator, ailerons, and their tabs surfaces does not present adequate drainage capacity to avoid water accumulation inside of these control surfaces. Internal water accumulation may lead to flight control surfaces unbalancing possibly reducing the flutter margins, which could result in loss of airplane control.

The MCAI requires visually inspecting the control surfaces (rudder, elevator, and aileron) and their tab surfaces for the existence of required drain holes and modifying the control surfaces by drilling drain holes. You may obtain further information by examining the MCAI in the AD docket.

### **Comments**

We gave the public the opportunity to participate in developing this AD. We received no comments on the NPRM (77 FR 24425, April 24, 2012) or on the determination of the cost to the public.

### **Conclusion**

We reviewed the relevant data and determined that air safety and the public interest require adopting the AD as proposed except for minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM (77 FR 24425, April 24, 2012) for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM (77 FR 24425, April 24, 2012).

### **Costs of Compliance**

We estimate that this AD will affect 38 products of U.S. registry.

We also estimate that it will take from .5 work-hour to 2 work-hours per product for 10 of the affected airplanes to comply with the basic inspection requirements of this AD. The average labor rate is \$85 per work-hour.

Based on these figures, we estimate the cost of the inspection on U.S. operators to be from \$425 to \$1,700, or \$42.50 to \$170 per product.

In addition, we estimate that any necessary follow-on actions will take from 2 work-hours to 38 work-hours and require parts costing \$50, for a cost from \$220 to \$3,280 per product. We have no way of determining the number of products that may need these actions.

We also estimate that it will take from 19 work-hours to 27 work-hours per product for 36 of the affected airplanes to comply with basic modification requirements of this AD. The average labor rate is \$85 per work-hour. Required parts will cost about \$100 per product.

Based on these figures, we estimate the cost of the modification on U.S. operators to be from \$61,740, to \$86,220, or \$1,715 to \$2,395 per product.

According to the manufacturer, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected individuals. We do not control warranty coverage for affected individuals. As a result, we have included all costs in our cost estimate.

#### **Authority for This Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs," describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in "Subtitle VII, Part A, Subpart III, Section 44701: General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

#### **Regulatory Findings**

We determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

#### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains the NPRM, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (telephone (800) 647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

#### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

#### **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

#### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new AD:

2012-13-04 **Empresa Brasileria de Aeronáutica S.A. (EMBRAER)**: Amendment 39-17106; Docket No. FAA-2012-0441; Directorate Identifier 2012-CE-011-AD.

**(a) Effective Date**

This airworthiness directive (AD) becomes effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to the following Empresa Brasileira de Aeronáutica S.A. (EMBRAER) Model EMB-505 airplanes certificated in any category.

(1) Group 1: Serial numbers (S/Ns) 50500030, 50500033 through 50500037, 50500039, 50500040, 50500044, and 50500046.

(2) Group 2: S/Ns 5050004 through 50500029, 50500031, 50500032, 50500038, 50500041 through 50500043, 50500045, 50500047 through 50500059, 50500061, 50500063, 50500065 through 50500068, 50500070, 50500074, and 50500075.

(3) Group 3: S/N 50500072.

(4) Group 4: S/Ns 50500069, 50500071, and 50500073.

**(d) Subject**

Air Transport Association of America (ATA) Code 27: Flight Controls.

**(e) Reason**

This AD was prompted by mandatory continuing airworthiness information (MCAI) originated by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as an inadequate amount of drain holes in the primary control surfaces (rudder, elevator, aileron) and their tab surfaces, which may allow water to accumulate in the control surfaces. We are issuing this AD to prevent unbalanced flight control surfaces and reduced flutter margins, which could result in loss of control of the airplane.

**(f) Actions and Compliance**

Unless already done, do the following actions:

**(1) Group 1 airplanes specified in paragraph (c)(1) of this AD:**

(i) Within the next 100 hours time-in-service after [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER] (the effective date of this AD) or within the next 3 calendar months after [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER] (the effective date of this AD), whichever occurs first, visually inspect the right-hand (RH) and left-hand (LH) aileron lower skin for the existence of required drain holes.

(ii) Before further flight after the inspection required in paragraph (f)(1)(i) of this AD, if the required drain holes do not exist, drill the drain holes.

(iii) Within the next 24 months after [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER] (the effective date of this AD), rework the ailerons, aileron trim-tabs, aileron horn covers, rudder, rudder trim-tab, elevators, and elevator auto-tab surfaces by drilling additional drain holes.

(iv) Do the actions required in paragraphs (f)(1)(i) and (f)(1)(ii) of this AD following the Accomplishment Instructions in EMBRAER Phenom Service Bulletin No. 505-57-0003, dated November 16, 2011.

(v) Do the actions required in paragraph (f)(1)(iii) of this AD following Part I of the Accomplishment Instructions in EMBRAER Phenom Service Bulletin No. 505-57-0002, dated February 13, 2012.

**(2) Group 2 airplanes specified in paragraph (c)(2) of this AD:** Within the next 24 months after [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER] (the effective date of this AD), rework the ailerons, aileron trim-tabs, aileron horn covers, rudder, rudder trim-tab, elevators, and elevators auto-tab

surfaces by drilling additional drain holes. Do the modifications following Part I of the Accomplishment Instructions in EMBRAER Phenom Service Bulletin No. 505-57-0002, dated February 13, 2012.

(3) Group 3 airplanes specified in paragraph (c)(3) of this AD:

(i) Within the next 24 months after [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER] (the effective date of this AD), rework the rudder, rudder trim-tab, elevators, and elevators auto-tab surfaces by drilling additional drain holes.

(ii) Within the next 24 months after [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER] (the effective date of this AD), inspect the ailerons for the existence of required drain holes.

(iii) Before further flight after the inspection required in paragraph (f)(3)(ii) of this AD, if the required drain holes do not exist, drill the drain holes.

(iv) Do the actions required in paragraph (f)(3)(i) of this AD following Part II of the Accomplishment Instructions in EMBRAER Phenom Service Bulletin No. 505-57-0002, dated February 13, 2012.

(v) Do the actions required in paragraphs (f)(3)(ii) and (f)(3)(iii) of this AD following Part II of the Accomplishment Instructions in EMBRAER Phenom Service Bulletin No. 505-57-0004, dated February 16, 2012.

(4) Group 4 airplanes specified in paragraph (c)(4) of this AD:

(i) Within the next 24 months after [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER] (the effective date of this AD), inspect the ailerons, elevators, and rudder for the existence of required drain holes.

(ii) Before further flight after the inspection required in paragraph (f)(4)(i) of this AD, if the required drain holes do not exist, drill the drain holes.



(iii) Do the actions required in paragraphs (f)(4)(i) and (f)(4)(ii) of this AD following Part I of the Accomplishment Instructions in EMBRAER Phenom Service Bulletin No. 505-57-0004, dated February 16, 2012.

**(g) Other FAA AD Provisions**

The following provisions also apply to this AD:

(1) **Alternative Methods of Compliance (AMOCs):** The Manager, Standards Office, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. Send information to ATTN: Jim Rutherford, Aerospace Engineer, FAA, Small Airplane Directorate, 901 Locust, Room 301, Kansas City, Missouri 64106; telephone: (816) 329-4165; fax: (816) 329-4090; email: jim.rutherford@faa.gov. Before using any approved AMOC on any airplane to which the AMOC applies, notify your appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, your local FSDO.

(2) **Airworthy Product:** For any requirement in this AD to obtain corrective actions from a manufacturer or other source, use these actions if they are FAA-approved. Corrective actions are considered FAA-approved if they are approved by the State of Design Authority (or their delegated agent). You are required to assure the product is airworthy before it is returned to service.

(3) **Reporting Requirements:** For any reporting requirement in this AD, a federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2120-0056. Public reporting for this collection of information is estimated to be approximately 5 minutes per response, including the time for reviewing instructions, completing and reviewing the collection of

information. All responses to this collection of information are mandatory. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at: 800 Independence Ave. SW, Washington, DC 20591, Attn: Information Collection Clearance Officer, AES-200.

**(h) Related Information**

Refer to MCAI Agência Nacional de Aviação Civil (ANAC) Brazilian Airworthiness Directive 2012-03-01, dated March 20, 2012; EMBRAER Phenom Service Bulletin No. 505-57-0002, dated February 13, 2012; EMBRAER Phenom Service Bulletin No. 505-57-0003, dated November 16, 2011; and EMBRAER Phenom Service Bulletin No. 505-57-0004, dated February 16, 2012, for related information.

**(i) Material Incorporated by Reference**

(1) You must use the following service information to do the actions required by this AD, unless the AD specifies otherwise. The Director of the Federal Register approved the incorporation by reference (IBR) under 5 U.S.C. 552(a) and 1 CFR part 51 of the following service information on:

(i) EMBRAER Phenom Service Bulletin No. 505-57-0002, dated February 13, 2012;

(ii) EMBRAER Phenom Service Bulletin No. 505-57-0003, dated November 16, 2011; and

(iii) EMBRAER Phenom Service Bulletin No. 505-57-0004, dated February 16, 2012.

(2) For service information identified in this AD, contact Empresa Brasileira de Aeronautica S.A. (EMBRAER), Phenom Maintenance Support, Av. Brigadeiro Faria Lima, 2170, São José dos Campos - SP, CEP: 12227-901 – PO Box 36/2, BRASIL; fax ++55 12 3927-2619; email [phenom.reliability@embraer.com.br](mailto:phenom.reliability@embraer.com.br); Internet: <http://www.embraer.com>.

(3) You may review copies of the service information at the FAA, Small Airplane Directorate, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the FAA, call (816) 329-4148.

(4) You may also review copies of the service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at an NARA facility, call 202-741-6030, or go to [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).  
Issued in Kansas City, Missouri, on June 21, 2012.

James E. Jackson,  
Acting Manager, Small Airplane Directorate,  
Aircraft Certification Service.

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